File: NOREA
Compaction Report
Phase B - Bldg 4
Area

NorCal Engineering

Soils and Geotechnical Consultants
10641 Humbolt Street Los Alamitos, CA 90720
(562) 799-9469 Fax (562) 799-9459

July 14, 1998 Project Number 5936-96

Boeing Realty Corporation
4060 Lakewood Boulevard, 6th Floor
Long Beach, California 90808-1700

Attn: Mr. Johnny Marasco

RE: **Observation and Testing of Backfill Operations** - Proposed Harbor Gateway - Located at 1414 W. 190th Street, in the City of Los Angeles, California

Dear Mr. Marasco:

Pursuant to your request, this firm has observed and tested backfill operations at the above referenced project. Results of the compaction tests are attached and locations of these tests are shown on the accompanying Site Plan. All work was performed in accordance with all present day standards of the Geotechnical Engineering Industry.

Backfill Operations

The fill areas consisted of 4 excavations ranging from 40 feet to 50 feet wide by 60 feet to 140 feet long with a maximum depth of 8.5 feet (removed buildings 11, 18, 14, and 15) below ground surface and a trench from a removed fire line 300 feet long by 4 feet deep. The excavations were cleansed of all demolition debris and low density soils to expose competent native soils. The excavation bottoms were observed and approved by this firm prior to placement of fill.

Fill soils placed were compacted to a minimum of 90% of the laboratory standard in lifts not in excess of eight inches in thickness. The maximum depth of fill placed was 8.5 feet. Conventional earthmoving equipment was utilized for compaction control. A water truck provided moisture control. The approximate limits of grading operations are indicated on the attached Site Plan.

Field/Laboratory Tests

The relative compaction was determined by Sand Cone Method (ASTM: D1556-82) and by the Drive Tube Method (ASTM: D2937). The maximum density of the fill soils was obtained by the laboratory standard (ASTM: D 1557-78) with results shown on Table I. Tests were performed a minimum of every 500 cubic yards and every two feet in depth of fill placed. Results of field density tests are presented in Table II. No chemical analysis was performed by NorCal Engineering on the excavations nor the backfill soils.

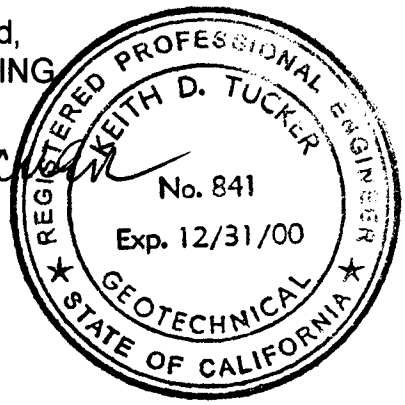
Conclusions

The geotechnical engineering aspects of the backfill operations have been observed and are in compliance with the geotechnical engineer's recommendations. The backfill meets secondary fill requirements for support of pavement and floor slab. The excavations have been backfilled to the approval of this firm and are suitable for their intended use.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,
NORCAL ENGINEERING

Keith D. Tucker
Project Engineer
R.G.E. 841



Mark Burkholder
Project Manager

TABLE I
MAXIMUM DENSITY TESTS
(ASTM: D1557-78)

Sample	Classification	Optimum Moisture	Maximum Dry Density (lbs./cu.ft.)
I	Clayey silt	12.0	121.0
II	Silty sandy clay with gravel and concrete pieces	10.5	128.0
III	Clayey silt with gravel and concrete pieces	11.0	125.0
IV	Clayey silty sand	14.0	117.0
V	Silty clay with gravel, brick, concrete	13.0	119.0

TABLE II
COMPACTION TEST RESULTS

Date of Test	Test No.	Elevation	Percent Moisture	Unit Wt. lbs./cu.ft.	Relative Compaction	Soil Type
7/2/98	101	6.0-6.5	13.5	114.6	95	I
7/2/98	102	4.0-4.5	11.7	121.6	95	II
7/2/98	103	2.0-2.5	11.4	122.9	96	II
7/2/98	104	9.0-9.5	12.6	113.2	94	I
7/2/98	105	10.0-10.5	13.8	111.3	92	I
7/2/98	106	8.0-8.5	11.0	119.2	93	II
7/2/98	107	6.0-6.5	11.7	118.4	95	III
7/2/98	108	5.0-5.5	11.7	112.4	93	I
7/2/98	109	4.5-5.0	12.6	119.0	95	III
7/6/98	110	3.5-4.0	18.3	105.7	90	IV
7/6/98	111	3.0-3.5	12.2	115.9	93	III
7/6/98	112	2.0-2.5	12.7	114.3	91	III
7/6/98	113	0.5-1.0	13.4	116.5	93	III
7/7/98	114	1.0-1.5	11.3	116.8	91	II
7/7/98	115	3.0-3.5	13.4	115.5	92	III
7/7/98	116	1.0-1.5	11.3	116.8	91	II

*Depth below finish grade (in feet)

**Retest of failing tests after area reworked

TABLE II
COMPACTION TEST RESULTS

Date of Test	Test No.	Elevation	Percent Moisture	Unit Wt. lbs./cu.ft.	Relative Compaction	Soil Type
7/7/98	117	0.5-1.0	10.5	115.8	93	III
7/7/98	118	0.5-1.0	10.7	114.7	92	III
7/8/98	119	7.0-7.5	10.2	113.4	91	III
7/8/98	120	5.0-5.5	11.2	116.0	91	II
7/8/98	121	4.0-4.5	12.0	117.9	94	III
7/8/98	122	3.0-3.5	15.0	111.9	94	V
7/8/98	123	2.0-2.5	12.9	109.8	92	V
7/8/98	124	0.5-1.0	12.6	111.0	93	V
7/9/98	125	4.0-4.5	12.9	111.6	92	I
7/9/98	126	4.0-4.5	13.5	114.5	95	I
7/9/98	127	3.0-3.5	12.7	116.9	94	III
7/9/98	128	2.0-2.5	12.2	115.9	93	III
7/9/98	129	2.0-2.5	12.5	118.7	95	III
7/9/98	130	0.5-1.0	14.2	110.3	93	V

*Depth below finish grade (in feet)

**Retest of failing tests after area reworked

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(562)799-9469 FAX (562)799-9459

CITY OF LOS ANGELES

DEPARTMENT OF BUILDING AND SAFETY

ENGINEER'S CERTIFICATE OF COMPLIANCE FOR COMPACTED EARTH FILLS

JOB/LEGAL ADDRESS: 1414 W. 190th Street, Los Angeles

SOIL TESTING AGENCY: NorCal Engineering

PROPERTY OWNER'S: NAME: Boeing Realty Corporation

OWNER'S ADDRESS: 4060 Lakewood Boulevard, 6th Floor, Long Beach

PER REPORTS ON OUR PROJECT NUMBER: 5936-96

DATE OF WORK STARTED ON PROJECT: 7/2/98

DATE FILL WAS COMPLETED: 7/9/98

DATE OF THIS CERTIFICATE: 7/14/98

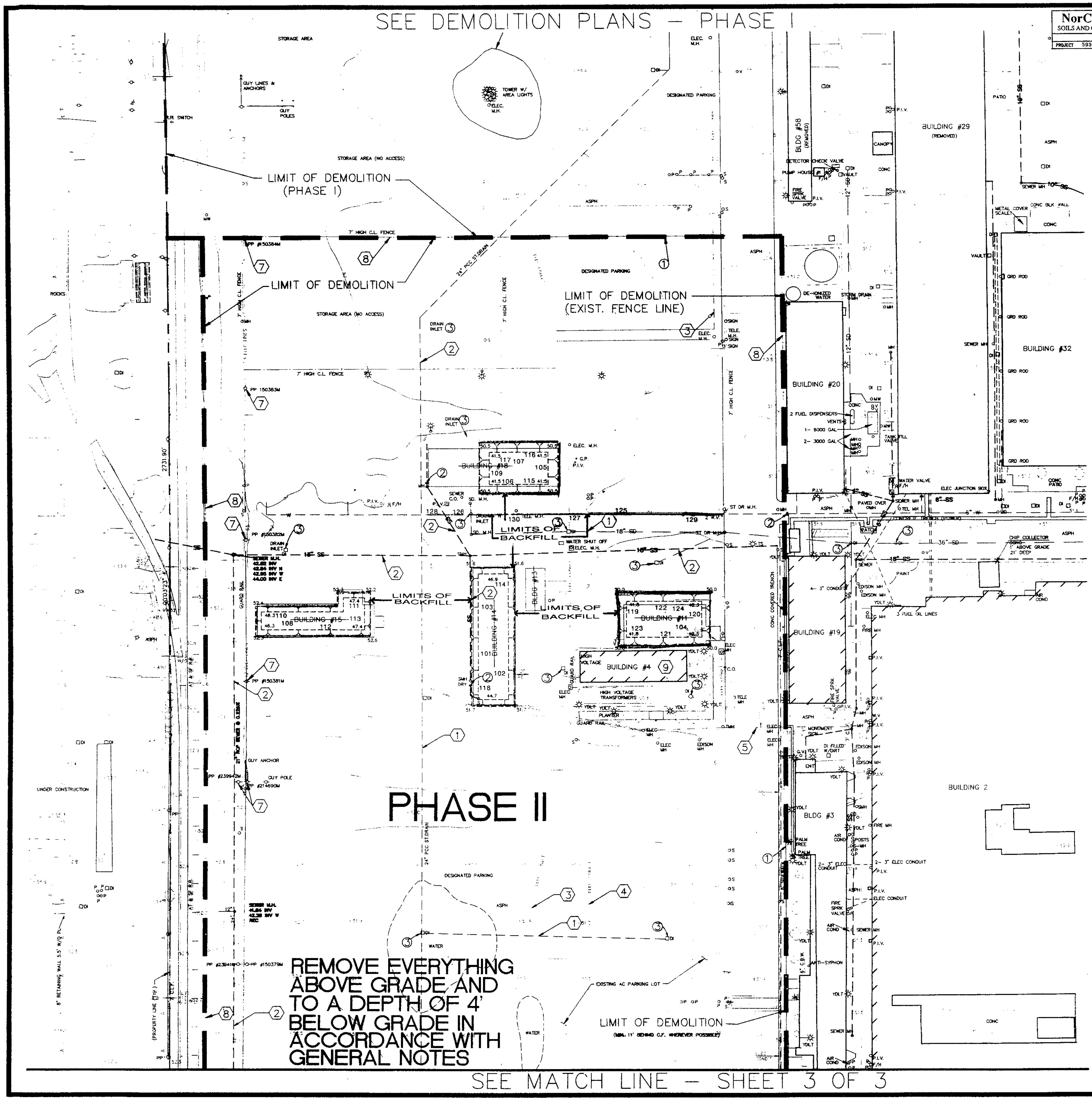
TO THE SUPERINTENDENT OF BUILDING:

I hereby certify that I have personally inspected and tested the placing of compacted earth fill on the above described property, and on the basis of these inspections and tests it is my opinion that the same was placed in conformity with the requirements of the Los Angeles City Building Code.

Keith D. Tucker
R.G.E. 841

REGISTERED PROFESSIONAL ENGINEER
KEITH D. TUCKER
No. 841
Exp. 12/31/00
GEOTECHNICAL
STATE OF CALIFORNIA

*For the purpose of this certificate, to have "personally inspected and tested" shall include inspection and testing performed by any person responsible to the licensed engineer signing this certificate. Where the inspection and testing of all or part of the work above is delegated, full responsibility shall be assumed by the licensed engineer whose signature is affixed thereon.



NorCal Engineering
SOILS AND GEOTECHNICAL CONSULTANTS
BOEING REALTY CORP.
PROJECT 5936-98A DATE JULY 1998

LOCATION OF COMPACTION TESTS

N

SCALE: 1" = 40'

50.0 EX. ELEV. / 42.0 EXC. ELEV. — INDICATES BUILDING REMOVAL & EXCAVATION

LEGEND

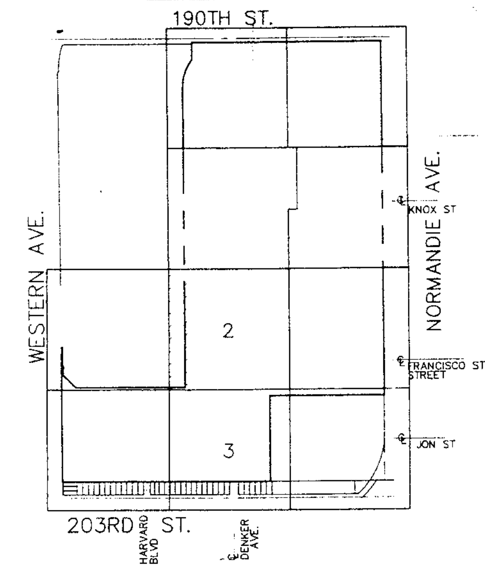
AC	AIR CONDITION
ASPH.	ASPHALT CONCRETE
BP	BACK FLOW PREVENTOR
CATV	CABLE TELEVISION
CB	CATCH BASIN
C.F.	CURB FACE
C.L.F.	CHAIN LINK FENCE
CO	CLEAN OUT
DI	DRAIN INLET
DMH	DRAIN MAN HOLE
EM	ELECTRICAL METER
FDC	FIRE DEPT. CONNECTION
FH	FIRE HYDRANT
FS	FIRE SERVICE
G	GAS
GM	GAS METER
GP	GUARD POST
ICV	IRRIGATION CONTROL VALVE
P	POST
PB	PULL BOX
PIV	POST INDICATOR VALVE
PP	POWER POLE
S	SIGN
SD	STORM DRAIN
SLPB	STREET LIGHT PULL BOX
SMH	SEWER MAN HOLE
SS	SANITARY SEWER
FM	FORCED MAIN
ST. LT.	STREET LIGHT
T	TELEPHONE
TSPB	TRAFFIC SIGNAL PULL BOX
U.G.	UNDERGROUND
W	WATER
WM	WATER METER
WV	WATER VALVE
YD. LT.	YARD LIGHT
	WALL

PROTECT IN PLACE

1. EXISTING STORM DRAIN, MANHOLES & DRAIN INLETS
2. EXISTING SEWER MAIN & MANHOLES
3. *HIGH VOLTAGE CONDUIT\VAULTS RUNNING SOUTH TO NORTH FROM DWP SUBSTATION TO HIGH VOLTAGE TRANSFORMER /SWITCH GEAR (BUILDING 4)
4. *HIGH VOLTAGE CONDUIT\VAULTS 25 KVA FROM (BUILDING 4) TO "JIG YARD"
5. *HIGH VOLTAGE CONDUIT\VAULTS FROM (BUILDING 4) TO EAST SIDE OF DENKER (SOUTH END OF BUILDING 19)
7. DWP POWER POLES.
8. EXISTING CHAIN LINK FENCE
9. BUILDING #4

*NOTE: REMOVE AT BRC DIRECTION, AFTER OVERHEAD POWER LINES ARE INSTALLED (INCLUDING VAULTS EVEN IF BELOW 4'-0" BELOW GRADE)

INDEX MAP



CONSTRUCTION NOTES

1. CONSTRUCT 7' PERIMETER CHAINLINK FENCE
2. CUT & PLUG
3. INSTALL TRIPLE COURSE SANDBAGS AROUND EXISTING DRAIN INLETS & REMOVE ANY EXISTING INLET BLOCKING DEVICES

IMPORTANT NOTICE
Section 4216/4217 of the Goverment Code requires a Dig Alert identification Number be issued before a Permit to Excavate will be valid For your Dig Alert ID Number Call
UNDERGROUND SERVICE ALERT
1-800-422-4133
For Underground Locating 2 Working Days before You Dig

NO.	DESCRIPTION	BY	DATE	CHK
1	CONVERTED TO AS-BUILT DEMOLITION	HS	7/2/98	G.S.

REVISIONS

TAIT & ASSOCIATES INC.
1100 TOWN & COUNTRY ROAD
SUITE 1200,
P.O. Box 4429
Orange, California 92668
(714) 560-8200
(714) 560-8211 FAX

TITLE: AS-BUILT DEMOLITION PLAN – PHASE II

PROJECT: BOEING REALTY CORP.
4060 LAKEWOOD BLVD., 6TH FLOOR
LONG BEACH, CA 90808-1700
HARBOR GATEWAY
LOS ANGELES, CA

DRAWN: R.N.
DATE: 12/11/97
CHECKED: P.C.
DATE:
REVISION #:
DATE:
JOB NO: SP3289

OF